

# Range Condition Report

## For the Tamarack Grazing Allotment Environmental Assessment

Tim Collins

July 24, 2017

/s/TIM COLLINS, JULY 24, 2017

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## **2 Purpose and Need for Action**

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The Umatilla Land and Resource Management Plan (LRMP) has the following goal for range management on the Forest: "Manage the forage resources for an upward vegetative trend in areas in less than "fair" condition and an upward or stable trend for areas in "fair" or better condition, while providing for forage productivity and making suitable range available for livestock grazing. Increase the level of forage production where cost efficient and consistent with other resource goals." (LRMP 4-63).

The purpose of this action is to continue authorization of livestock grazing in a manner that is consistent with the Umatilla Forest Plans, as amended. The needs associated with this purpose are:

There is a need to meet the requirement of Section 504 of the 1995 Rescissions Act, which requires NEPA analysis and decisions for all grazing allotments by 2025. There is a need to update the terms and conditions of the Allotment Management Plans and term grazing permits. Management Plans currently in place are outdated and do not reflect changed laws, regulations, and new information. The present allotment management plan was implemented in 1978, prior to the Forest Plan. This needs to be updated to reflect the most current laws, regulations, and management direction, and to incorporate new or changed conditions and recent science.

There is a need for the permittees to continue grazing the Tamarack Allotment. There is a need to improve control of livestock for better distribution, more controlled utilization of vegetation, and protection of other resources.

Livestock grazing provided by the Tamarack Allotment provides an income to the permittee, Forest Service, and counties, as well as jobs and economic stability to the local ranching community. A decrease in the number of livestock permitted on this allotment would directly reduce revenues and could impact communities within the economic impact area.

The purpose of the proposed action is to facilitate livestock management by providing more control in riparian areas and provide more flexibility when drought, fire or other natural events occur that would necessitate changes in management.

## **3 Proposed Action**

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The Heppner Ranger District proposes to continue authorization of livestock grazing on the Tamarack Allotment located on the Umatilla National Forest. A new Allotment Management Plan (AMP) would be written to update changes that have been made

through Annual Operating Instructions, incorporating Forest plan, and PACFISH grazing standards and guidelines, and regulatory agency consultation on ESA listed species.

The livestock industry is interested in managing and grazing the Tamarack Allotment. Monitoring data supports that resources are in satisfactory conditions on the Tamarack Allotment. Utilization standards described in the Land and Resource Management Plan have been consistently met on the allotment.

#### **4 Allotment History**

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Domestic livestock grazing first occurred on the Tamarack Allotment area as early as the mid-1700's. Livestock use was not managed until the early 1900's and use records started in 1915. High stocking levels, stock driveways, and lack of management resulted in poor upland and riparian conditions (Reconnaissance Report 1917). Stocking levels on this allotment peaked in 1918. **Table 2** identifies current and past livestock numbers on the Tamarack Allotment.

During the 1940's through the 1960's, stocking levels were being reduced on this allotment while long-term condition and trend clusters were established to monitor upland vegetation. During the 1970's and 1980's division fences and boundary fences were constructed to increase management of livestock and improve resource conditions. From the late 1980's to present, riparian fences were constructed to reduce impacts caused by livestock and allow the riparian condition to improve.

During the early 1990's there were 5 permittees on the Tamarack-Monument Allotment. By 1998 the Forest Service and the four remaining permittees managed this allotment as two allotments. From 2001 to present there have been three permittees on the allotment. In 2004 an administrative decision was made by the District Ranger, to split the administration of the Tamarack-Monument Allotment into the Tamarack Allotment and the Monument Allotment. Currently there are two permittees are permit to graze on the Tamarack Allotment.



*Table 1. History of Grazing Use on the Tamarack Monument Allotment<sup>1</sup>*

<b>Year</b>	<b>Actual Use<sup>2</sup></b>	<b>Season</b>	<b>Head Months</b>	<b>Acres<sup>3</sup></b>	<b>Acres/Head Month</b>
1915	1,160	4/16-10/31	7,540	35,000	4
1916-1917	1,600	4/15-10/31	10,400	45,000	4
1918-1926	2,000	6/16-09/30	7,000	60,000	8
1927-1929	549	5/01-10/31	3,294	47,000	14
1930-1953	562	5/16-10/15	2,810	41,500	14
1954-1965	618	5/16-10/15	3,090	41,500	13
1966-1977	519	5/16-10/15	2,595	38,202	14
1978-1981	500	5/16-10/15	2,500	38,202	15
1982-1990	530	5/16-9/30	2,385	38,202	16
1991-1994	541	5/16-9/30	2,511	38,202	15
1995-1998	501	5/01-9/15	2,255	38,522	17
1999-present	209	5/01-9/15	954	19,441	20

The current Environmental Assessment (EA) and Allotment Management Plan (AMP) were approved for the Tamarack Monument Allotment in 1978. The current Forest Plan

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<sup>1</sup> 1998-2004 the Tamarack-Monument Allotment was managed as two separate allotments. In 2004 an administrative decision was made to split the allotment into two different allotments (Tamarack and Monument Allotments). Prior to 1999 all numbers are a combination of the current Tamarack and Monument Allotments. Numbers after 1999 are for the Tamarack Allotment only

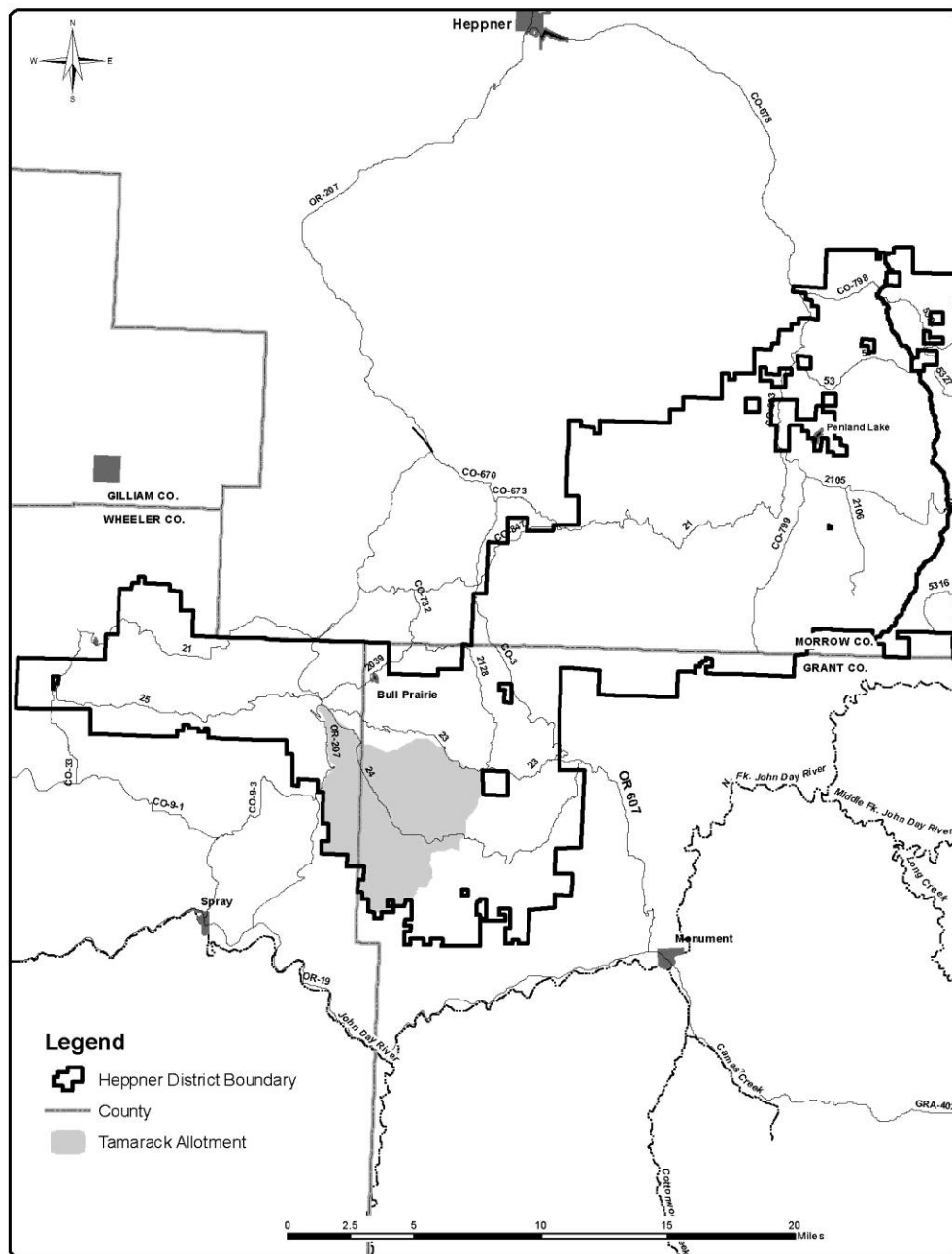
<sup>2</sup> All includes private land numbers and is the average number of livestock grazed.

<sup>3</sup> Acres before 1970 from records and more recently from GIS. Acres are very close but may be discrepancies due to lack of tracking of changes in allotment boundaries.

was signed in 1990 and amended by the PACFISH Environmental Analysis in 1995. As a result, changes required by new laws and policies were implemented in Term Grazing Permits and implemented within functional Annual Operating Instructions (AOI).

#### **4.1 ALLOTMENT OVERVIEW**

The allotment is located approximately 40 miles southeast of Heppner Oregon on the southern end of the Blue Mountains between Heppner and Spray Oregon. Map 1 identifies the vicinity of the Tamarack Allotment in relation to the cities of Heppner and Spray Oregon and surrounding national forest system lands. Access to the allotment is primarily from state highway 207 between Heppner and Spray Oregon. The allotment consists of 19,441 acres (current GIS). The allotment is located in Wheeler, and Grant Counties, and is within the boundaries of the Umatilla National Forests. Elevation varies from about 2,900 West Bologna Creek to 5,000 feet near Little Tamarack Mountain



*Map 1: Project Area Vicinity*

#### **4.1.1 Landscape Features**

Terrain within the allotment area is primarily extensive plateaus incised by steep canyons. The bedrock for the areas is basalt which accounts for the typical exposed rim rock canyons on southern slopes and ridge breaks within the allotment. Approximately 68% of the allotment has a forested cover type with an associated grass/forb/shrub understory. Approximately 71% of the forested cover type is

dominated by Juniper, Ponderosa pine, and Douglas fir. Much of the forest dominated southern slopes are grassland/shrub plant association mixed with Juniper and Mountain Mahogany. Grassland communities within the allotment are most often found on south facing slopes and in areas where soil depths limit tree survival. Shallow soil types are often found along ridges or steep slopes where rock outcrops occur. Grassland communities within the allotment are usually dominated by native bunchgrass plant associations with isolated pockets of upland shrubs Stiff sagebrush/Sandberg's bluegrass plant associations. Forested plant communities dominate the northern aspects and western slopes of the allotment. Roughly 17% of the allotment has riparian characteristics and 83% of the area is considered uplands away from streams and waterways.

Cattle typically graze areas within pastures that are lower elevation earlier in the grazing season switching to forested areas mid to late season due to forage quality and the distribution of water developments in the uplands. Past timber management along with other disturbances (fire) within the allotment area has provided transitory range for livestock. Since the 1970's water developments (ponds and spring with troughs) have been developed to improve livestock distribution on the allotment. Current Management

The current livestock management on the Tamarack Allotment authorizes 209 cow/calf pairs from May 1st through September 15th. The grazing season may be adjusted due to resource conditions or unpredictable events (fire, drought, saturated soil conditions). Table 2 identifies pasture within the allotment, approximate acreages, days cattle spend on the allotment, pastures use restrictions due to ESA listed Mid-Columbia Steelhead spawning restrictions and headmonths.

The current grazing system is a deferred rotation system on pastures within the allotment. The Tamarack Allotment consists of the Little Tamarack, Stalling Butte, Wildhorse and Wall Creek Riparian Pastures. The Stalling and Little Tamarack pastures are used primarily early to mid-season depending on resource conditions and objectives for the grazing season. The Wildhorse pasture is used primarily mid to late season depending on the management objectives for the season. The Wall Creek Riparian pasture grazing strategy is to limit livestock use during the late season depending on resource objectives. Pastures within the Tamarack Allotment are grazed annually by livestock. Best Management Practices (improve soils and water quality), Forest Plan and PACFISH standards and guidelines and are currently being implemented to provide better management and continue to improve resource conditions on the allotment in the uplands, and in riparian areas (Appendix A).

*Table 2. Pasture Use within the Tamarack Allotment*

<b>Pasture</b>	<b>Acres</b>	<b>Days Pasture<sup>4</sup></b>	<b>in Restrictions<sup>5</sup></b>	<b>Head Months</b>
Wildhorse	8,873	80	July 15th	490
Little Tamarack	4,155	70	None	200
Stalling Butte	6,217	60	None	256
Wall Riparian	126	variable	July 15th	30

#### **4.1.2 Water Sources**

Within the Tamarack Allotment, 62 water sources have been developed to distribute livestock throughout the uplands within the allotment. These improvements help achieve better distribution of livestock across the allotment. These improvements will be maintained annually.

#### **4.1.3 Riparian Fences**

There are approximately 9.25 miles of riparian fence that have been constructed on streams within the Tamarack Allotment. These fences are identified in Table 3 below. These fences are designed to improve livestock distribution in the uplands and to enhance riparian conditions. These improvements are maintained annually to meet management objectives.

*Table 3. Miles of Riparian Fence on the Tamarack Allotment*

<b>Pasture</b>	<b>Name</b>	<b>Fence Miles</b>	<b>Type</b>	<b>Year Constructed</b>
Wildhorse	South Fork of Wall Creek	5.25	Barbed Wire	1999-2000

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<sup>4</sup> The approximate number of days spent in each pasture will vary depending on resource conditions, utilization levels as related to standards and guides and desired conditions (dates may change in relation to desired conditions).

<sup>5</sup> Pastures that do not have any use restrictions may be used throughout the permitted grazing season. Pastures that currently have a restriction, due to spawning habitat, may be grazed after June 30<sup>th</sup> unless there is a change in conditions (streams may be fenced or the restriction change).

Pasture	Name	Fence Miles	Type	Year Constructed
Wildhorse	Dark Canyon	1.5	Barbed Wire	1999
Wall Creek Riparian	Wall Creek	2.5	Barbed Wire	1978

#### **4.1.4 Corrals and holding areas**

The Tamarack Allotment has three permanent corral facilities within the allotment. The 100 road corral, the 2400 road corral and the 2406 road corral. These facility are used to load and unload cattle throughout the grazing season.

## **5 Monitoring Requirements and Responsibilities**

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The following monitoring would occur as part of implementing grazing on the Tamarack Allotment. These standards and monitoring methods have proven to be effective on the Umatilla National Forest and supported by the Forest Plan, past monitoring, permit administration, and long term monitoring data.

### **5.1 FOREST PLAN UTILIZATION STANDARDS**

The Umatilla Forest Plan identifies utilization standards to assure continued maintenance or improvement of vegetation and soils. Maximum utilization standards have been set for both riparian and upland vegetative communities depending on range condition (Satisfactory or Unsatisfactory-- Table 4). Utilization of grass and forbs are measured by percent weight of forage remaining, while shrubs are measured by annual growth remaining. These utilization standards are maximum levels of use, regardless of which animal species uses the forage or browse. The standard reached first will be the most restrictive and livestock will be removed prior to that standard being exceeded. If standards do not maintain the desired conditions, a more restrictive standard will be prescribed as part of the adaptive management process.

The Forest Service range manager measures utilization during and after grazing. Monitoring of riparian vegetation occurs in areas that are representative of the associated pasture. The monitoring areas are locations where forage utilization would first become evident, or where utilization forage would lead to unacceptable resource conditions. Upland monitoring may be conducted by the permittee, with visual inspections by the Forest Service range manager. If the range manager visually identifies an area of concern, more intensive measurements are taken.

Height/weight curves for many rangeland plant species have been converted to utilization measures to provide a quick, reasonable estimate of the level of grazing that

could be sustained, while still allowing plants to store carbohydrates for seasonal growth and persistence.

*Table 4. Standards for Satisfactory and Unsatisfactory Conditions for grasses and shrubs+*

<b>Measure</b>	<b>Upland grass and forbs—forested</b>	<b>Upland grass and forbs—grassland</b>	<b>Upland grass and forbs—shrubland</b>	<b>Riparian grass and forbs</b>	<b>Riparian grass and forbs--shrublands</b>
<b>Satisfactory</b>	45%	55%	40%	45%	45%
<b>Unsatisfactory</b>	35%	35%	30%	35%	30%

## 5.2 INTERAGENCY IMPLEMENTATION MONITORING STANDARDS

The Forest Plan as amended by PacFish/INFISH and Interagency Implementation Team (IIT) standards require that grazing practices be modified if they retard or prevent attainment of riparian management objectives. Maximum implementation standards of stream bank stubble height for sediment entrapment trigger stubble height are used as a proxy to identify a condition when livestock impact other resources, and to assess if changes in annual grazing prescriptions for the next year need to be modified.

The standards described in tables 5 and 6 will be applied at Designated Monitoring Areas (DMA), table 7 along stream reaches where appropriate. Designated Monitoring Areas may be moved to different locations based on resource conditions. Trigger and shrub monitoring will be applied as a point in time measurement. Greenline standards are monitored at the end of season. The standards may be changed to a more restrictive standard if it is determined that desired future conditions are not being maintained. Livestock will be moved from the area when the trigger standard is met or before it is met. If there is not an appropriate DMA within a management unit or pasture, a DMA will not be established.

*Table 5. Riparian Standards*

<b>Measure</b>	<b>Greenline</b>	<b>Trigger Monitoring</b>	
<b>Utilization of Annual Growth for Riparian Grass and Forbs</b>	4 inches	5 inches	NA

Measure	Greenline	Trigger Monitoring	
Utilization of Annual Growth for Riparian Shrubs	NA	NA	30%

**Table-7** illustrates current Designated Monitoring Areas (DMA's) on the Tamarack Allotment.

### 5.3 DESIGNATED MONITORING AREAS (DMA)

*Table 6. Designated Monitoring Area (DMA)*

KEY AREA	HABITAT TYPE	KEY SPECIES
Wall Creek	Greenline	Wet Meadow
Tamarack Creek	Greenline	Wet Meadow
South Fork Wall Creek	Greenline	Wet Meadow
West Fork Bologna Creek	Greenline	Wet Meadow

#### 5.3.1 Upland Vegetation

The Umatilla Land and Resource Management Plan goal for range is to “manage the forage resources for an upward vegetative trend in areas in less than fair condition and an upward or stable trend for areas in fair or better condition, while providing for forage productivity and making suitable range available for livestock grazing (ULRMP Page 4-63).

#### 5.3.2 Monitoring

To assess the Tamarack Allotment and determine the existing conditions of vegetation, a variety of tools were used. Assessment of range health was conducted on grasslands across the allotment using the Interpreting Indicators of Rangeland Health protocols (Pellant et. al, 2005). Past grazing management and the results were analyzed. Past utilization levels and general field reconnaissance was also used to help determine if management was meeting objectives for the allotment. Established Condition and Trend Plots were analyzed to determine trend and range health. Photo interpretations were also used in conjunction with the collection and analysis of data. All of these



assessment tools were cumulatively used to determine the conditions of vegetation within the allotment.

### **5.3.3 Riparian Vegetation**

The following Forest Plan/Pacfish standards identified above would apply to riparian habitat conservation areas on the Tamarack Allotment and to other areas not specifically identified as a riparian habitat conservation area but that have riparian habitat characteristics with the potential to be affected by livestock grazing.

Many riparian areas have been fenced to exclude livestock to improve resource conditions on riparian habitat within the allotment. Within the Tamarack Allotment 17% of the land base within the allotment (approximately 3,305 acres) are associated with riparian areas and 83% of the land base is associated with uplands vegetation (16, 138 acres are forest and non-forest vegetation types). Of the 17% land base associated with riparian areas approximately 48% of those acres are excluded from livestock use using permanent barbed wire fencing. Approximately 52% of the total riparian areas that is not excluded from livestock use includes upland ephemeral channels and dry swale areas where water is limited to early season runoff.

### **5.3.4 Monitoring**

Implementation monitoring focuses on utilization and residual stubble height monitoring on riparian habitats. Utilization monitoring measures the percentage of available forage that has been consumed (weight of plant, number of plants, twigs, etc.). Utilization monitoring can be used to identify use patterns, help establish cause-and-effect relationships, and aid in making adjustments to the grazing strategy (Interagency Technical Reference 1734-3, 1999). Implementation monitoring is used to adjust annual operating instructions to manage permitted livestock number in a pasture for a planned number of days. The number of days livestock spend in a pasture is looked at annually prior to the grazing season and adjustments in days is often changed during the grazing season to meet utilization/management objectives.

The Tamarack Allotment has consistently met prescribed utilization standards for the allotment. Table 7 summarizes the monitoring data outlined in appendix B and C of this report. These monitoring results indicate that the Tamarack Allotment management has consistently met utilization standards and guidelines found in the Umatilla National Forest Land and Resource Management Plan.

Table 7. Compliance with Forest Plan Standards

PASTURE	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LT. Tamarack	ND <sup>6</sup>	ND	Yes <sup>7</sup>	Yes	ND	Yes	ND	ND	ND	Yes
Stalling Butte	Yes	Yes	Yes	Yes	Yes	Yes	Yes	ND	Yes	Yes
Wildhorse	Yes	Yes	Yes	Yes	ND	Yes	ND	Yes	Yes	Yes
Wall Creek Rip.	NG <sup>8</sup>	NG	NG	NG	NG	NG	NG	NG	NG	NG

### 5.3.5 Effectiveness Monitoring

Effectiveness monitoring, or long term monitoring, is used to determine the condition and trend of upland and riparian vegetation as they relate to livestock grazing activities in the Tamarack Allotment. Described below is the effectiveness monitoring plan for the Tamarack Allotment. Monitoring occurs prior to livestock entering the national forest, during the grazing season and after livestock leave the national forest. Monitoring methods used involve range readiness checks (plant and soil conditions prior to turning livestock onto the allotment); compliance checks (visual inspections of utilization on pastures during the grazing season); monitoring post livestock use (designated monitoring areas within pastures using percent use estimates and measuring riparian stubble height on greenline vegetation on riparian areas). These standards and monitoring methods are used in combination with livestock grazing management practices (livestock numbers, season of use and duration of use) within pastures on the Tamarack Allotment

#### ***Effectiveness Monitoring on Upland Habitats***

Condition and Trend (C&T) Clusters have been established in the Tamarack Allotment and have been monitored to determine the trend of vegetation and soil conditions on the allotment. Trend evaluation would be used to help determine if

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<sup>6</sup> ND = No data

<sup>7</sup> Yes = Met Forest Plan Standards

<sup>8</sup> NG = Not grazed

livestock grazing on the allotment is allowing maintenance of or movement towards desired vegetation conditions (Forest Plan Goal). Forest Plan utilization monitoring on uplands can be used to evaluate grazing utilization throughout the grazing season.

#### ***5.3.5.1 Effectiveness Monitoring on Riparian Habitats***

Riding and herding livestock, mineral placement in the upland, upland water developments, number of days cattle have access to riparian areas, and monitoring have been effective at meeting current Forest Plan/Pacfish management goals and objectives. Pastures within the allotment that have riparian vegetation are monitored throughout the grazing season by the Forest Service and the permittee. Monitoring consist of using current stubble height of greenline vegetation, percent browse use on riparian shrubs, and Forest Plan Utilization Monitoring. Monitoring riparian areas will continue under all action alternatives as determined by the Range Specialist.

Monitoring methods and protocols will be based on the need for monitoring livestock use on riparian areas. Summary

Monitoring on the Tamarack Allotment indicates that resource conditions are improving in the uplands and on riparian areas. Monitoring has been used to assess conditions of the resource on the allotment. Forest Plan objectives are met using Best Management Practices described in appendix A and monitoring that have been used to validate that resource conditions are in satisfactory condition and are continuing to improve. Upland water developments, livestock management (season of use and livestock numbers), mineral placement, livestock herding and fencing sensitive areas has been an important part of the successful management of this allotment. Many of the riparian fences that were constructed in the mid-1990s have improve resource conditions on sensitive riparian area. The continuation of the current resource management on this allotment is important to maintain satisfactory resource conditions. Continuing to maintain and improve current and proposed upland water developments, fences are necessary to continue to improve resource conditions on the allotment. Suitability Analysis

#### **5.4 GRAZING SUITABILITY**

This analysis identifies capable and suitable acres within the analysis area and the design criteria used to manage livestock on the allotment. This analysis also discusses areas that are within the allotment that are unsuitable for grazing. Whether lands are capable of being managed for grazing depends on conditions such as slope, aspect, geology, soil types, vegetation type, as well as climate. Lands with slopes over 45%, canopy cover over 60%, and lands with low forage production were considered less than fully capable. Though cattle grazing may occur in areas considered less than fully capable, it is expected that these areas would not get frequent or consistent use and effects would be limited here. Those areas considered fully capable represent where cattle spend most of their time and where effects would most likely occur.

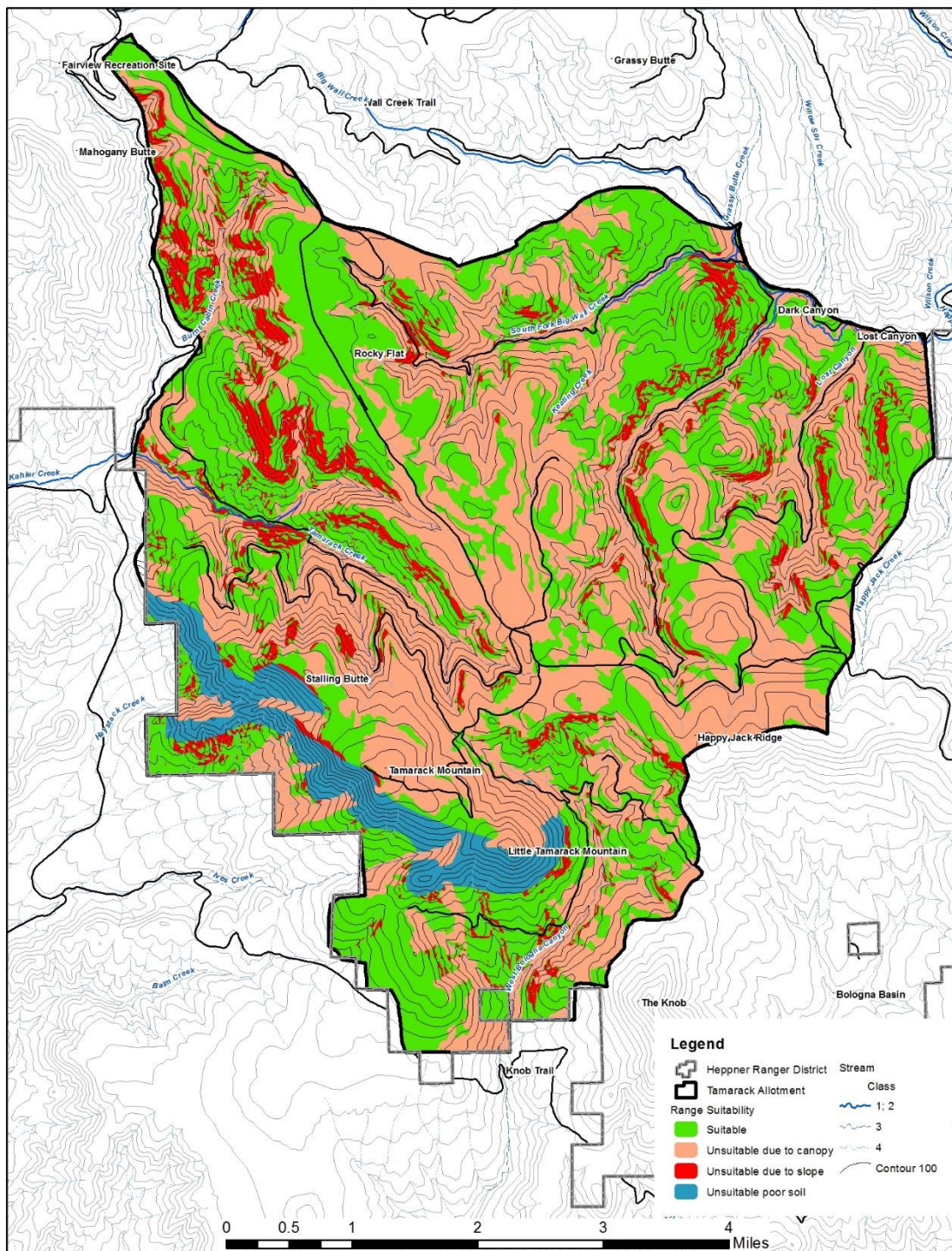
Table 9 below summarizes the capability analysis for the Tamarack Allotment. Approximately 43% of the Tamarack Allotment is fully capable. Canopy cover over 60 percent is estimated to occur on 45% of the allotment. Roughly 4% of the allotment has low productive soils and 6% of the allotment exceed 45% slopes. Cattle grazing can and does occur on lands considered less than fully capable. The amount of use in these areas is limited to the available forage that occurs on those sites. Prescribed utilization standards are adequate to ensure that resource needs are met on lands considered less than fully capable. Timber and fuels management such as commercial thinning, noncommercial thinning, prescribed fire, and wildfires can reduce canopy cover below 60%, creating transitory rangeland and changing those areas to fully capable.

*Table 8. Capability Analysis Summary*

<b>ELEMENTS</b>	<b>ACRES</b>	<b>% of Allotment</b>
Fully Capable	8360	43%
Canopy Over 60%	8804	45%
Low Production	859	4%
Slope Over 45%	1,292	6%

Those areas that are often considered not suitable for grazing include canyon rims with excessive slopes, with little to no vegetation, developed roads, exclosure, and developed recreational sites. Cattle are allowed to graze within pastures within the allotment and all pastures have areas that are considered not fully capable for livestock use. These areas are considered not fully capable for livestock grazing and livestock use is very limited.

Areas on the allotment that are fully capable, where livestock spend their time during the grazing season, are managed using different management tools to reduce the long term effects grazing may have. This may include but are not limited to upland water developments, mineral (salt/supplements) placement, livestock herding within pastures, timing of livestock use, livestock numbers within a pasture, livestock exclosures and class of livestock are just some of the tools used to manage livestock on the allotment to maintain and improve resource conditions on the allotment.



*Map 2. Grazing Capability*



## 5.5 FORAGE PRODUCTION STUDY ON THE TAMARACK ALLOTMENT.

*Table 9. Summary of Production Study for Tamarack Allotment*

<b>Current Permitted Livestock Numbers (cow-calf pairs)</b>	<b>Forage Production Required for Permitted Livestock Annually (Pounds/Acre )</b>	<b>Annual Forage Produced on Suitable Acres (Pounds/Acre )</b>	<b>Forest Plan Allowable Use Standard for Wild and domestic Ungulates (Pounds/Acre )</b>	<b>Available Forage not utilized (Pounds/Acre )</b>
209	865,260	2,985,803	1,343,611	478,331

<sup>9</sup>There is not a stocking problem on the allotment with the current numbers (209 C/C pairs) and season of use (4.6 months). The amount of forage consumed by livestock correlates to number of days and the number of livestock on the allotment/pastures. Distribution of livestock can be influenced by herding, mineral placement, fence placement, and distance livestock travel for water.

Monitoring on the allotment rarely exceeds 20% use on uplands across pastures within the allotment. There are areas that receive higher use on the allotment during the grazing season. This is often related to the distance cattle have to travel between water sources and fences where cattle congregate waiting to be moved to the next pasture. Forest Plan Management Strategy for the Tamarack Allotment (pp. 4-94 thru 4-195)

*Table 10. Forest Plan Management Areas with the Tamarack Allotment and Compliance with Forest Plan Strategies*

<b>Management Strategy</b>	<b>Acres Within Allotment</b>	<b>Compliance with Forest Plan Strategy</b>
A4=Viewshed	309	Yes
C1=Dedicated Old Growth	628	Yes
C3=Big Game Winter Range	3,564	Yes

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<sup>9</sup> Use by livestock is based on Forest Plan Standard of 45% allowable use. Wildlife will occupy areas that are considered unsuitable for livestock grazing. Upland monitoring indicates that use in the uplands usually does not exceed 20% use by all ungulates (livestock and wildlife).

<b>Management Strategy</b>	<b>Acres Within Allotment</b>	<b>Compliance with Forest Plan Strategy</b>
C5=Riparian Fish and Wildlife	567	Yes
D2=Research Natural Area	84	Yes
E1=Timber and Forage	14,226	Yes
P=Private	50	N/A
Total Acres	19,441	N/A

### **5.6 A4=VIEWSHED (309 ACRES)**

A moderate level of livestock grazing is permitted. Openings created by management of timber stands should be available for management as transitory range. Development and maintenance of range improvements are permitted. Range utilization standards, management practices, and improvements are to be designed and managed to meet visual quality objectives (Forest Plan 4-107).

### **5.7 C1=DEDICATED OLD GROWTH (628 ACRES)**

Moderate levels of livestock grazing is permitted; however forage in general will be limited to that which is normally present under densely forested canopies. Maintain existing range improvement structures (Forest Plan 4-145).

### **5.8 C3-BIG GAME WINTER RANGE (3,564 ACRES)**

Domestic livestock grazing is permitted at Range Management Strategy C. Structural range improvements are permitted to the extent they are compatible with big game winter ranges (Forest Plan 4-153).

### **5.9 C5-RIPARIAN FISH AND WILDLIFE (567 ACRES)**

Intensive range management, including superior grazing systems, such as periodic rest, will be practiced to protect and improve riparian vegetation and anadromous fish habitats. Range improvements that maintain or enhance riparian habitat goals will be permitted (Forest Plan 4-164).

### **5.10 D2-RESEARCH NATURAL AREA (84 ACRES)**

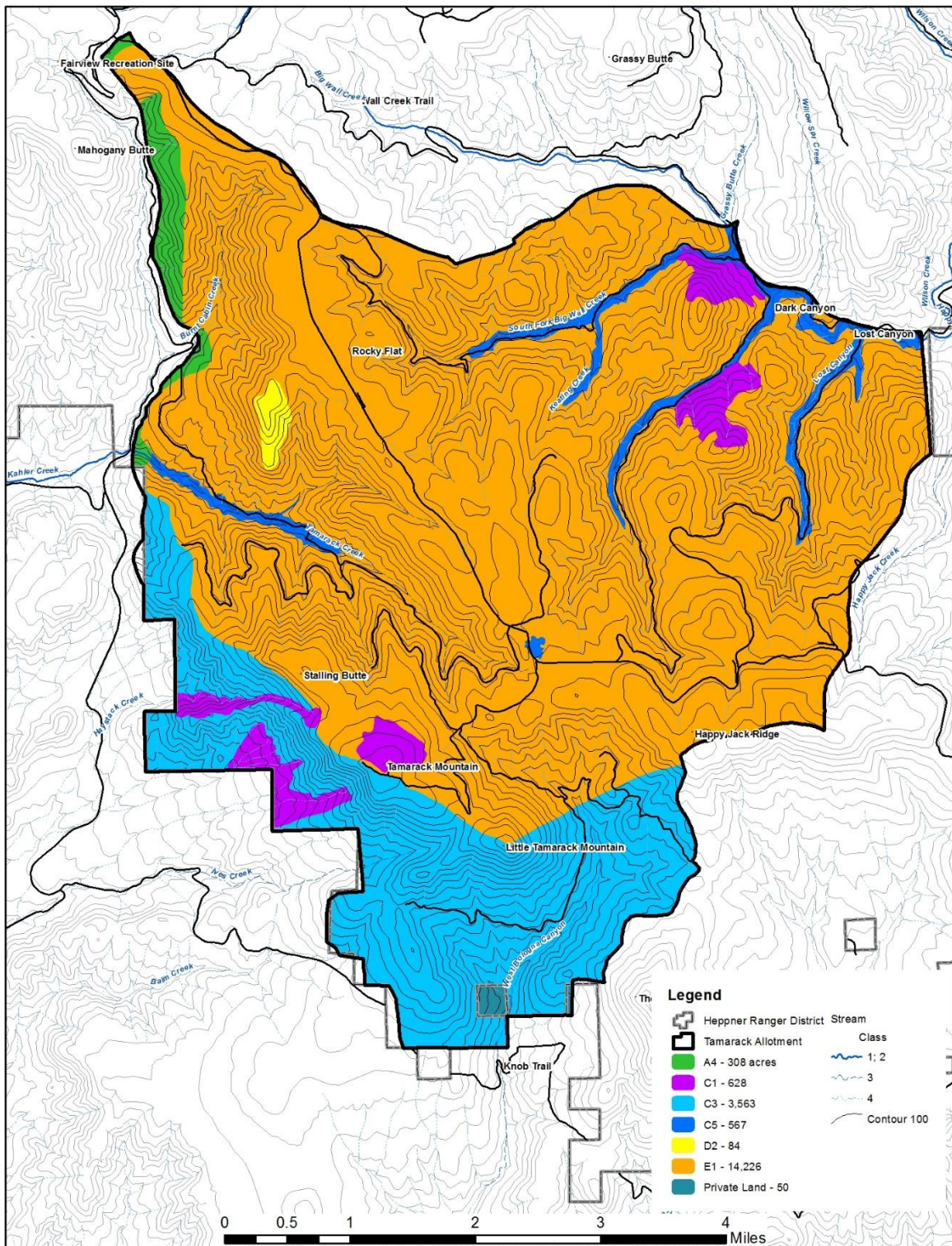
Prohibit grazing of domestic livestock unless it is needed to establish or maintain a specific vegetation type.

Improvements are not permitted; boundary fencing may be required to provide protection to the NRA (Forest Plan 4-176).

**5.11 E1-TIMBER AND FORAGE (14,226 ACRES)**

Manage range and livestock through Range Management Strategies C and D with improved management systems. The full range of development and maintenance of structural and nonstructural improvements is permitted (Forest Plan 4-179).





Map 3. Forest Plan Management Strategy for the Tamarack Allotment

## 6 Interpreting Indicators of Rangeland Health

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Methodology--Interpreting Indicators of Rangeland Health (IIRH) is a method to assess rangeland health defined in Technical Reference 1764-6 as: "The degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of the rangeland ecosystem is balanced as sustained" (Pellant et al. 2005). This assessment is accomplished with an interdisciplinary team, and is an attempt to look at how well ecological processes in a site are functioning within a normal rate of variability. The following three parameters are rated (Pellant):

1. Soil and Site Stability, which is defined as "the capability of an area to limit redistribution and loss of soil resources (including nutrients and organic matter) by wind and water".
2. Hydrologic Function, which is defined as "the capability of an area to capture, store, and safely release water from rainfall, run-on, and snowmelt (where relevant), to resist a reduction in this capacity, and to recover this capacity when a reduction does occur".
3. Biotic Integrity, which is the "capability of the biotic community to support ecological processes within the normal range of variability expected for the site, to resist a loss of capacity to support these processes, and to recover this capacity when losses do occur. The biotic community includes plants, animals, and microorganisms occurring both above and below ground"

Ratings reflect the degree of departure from expected levels, or the reference condition as follows.

Extreme to Total Departure

Moderate to Extreme Departure

Moderate Departure

Slight to Moderate Departure

None to Slight Departure

For the Tamarack Allotment assessment, the following qualitative indicators were rated from one to five. Ten of the indicators relate to soil characteristics and include rating degrees of rills, water flow patterns, pedestals/terraces, bare ground, gullies, wind scours/deposition, litter movement, surface resistant to erosion, surface loss or degradation, and compaction. Ten of the indicators relate to hydrologic function and include rating degrees of rills, water flow patterns, pedestals/terraces, bare ground, gullies, surface resistant to erosion, surface loss or degradation, plant composition relative to infiltration, and compaction. Nine indicators relate to the biotic community

and include surface resistant to erosion, surface loss or degradation, compaction, functional/structural groups, plant mortality/decadence, litter amount, annual production, invasive plants, and reproductive capability of perennial plants (results/conclusions are located in Appendix F).

## **6.1 CONDITION AND TREND PLOTS**

Condition and Trend plots were analyzed in 2003 and in 2015. Plots are located within each pasture within the allotment. A comparison of species composition measurements and a photo record has been established and these transects have been read in 2003 and 2015. The photos below show each condition and trend photo point for each pasture within the allotment. In comparing the data and evaluating the photo records between 2003 and 2015 a summary of the data has been developed.

### **Summary**

The data indicates that there is not a real measurable difference in frequency of desirable native plant species that were present in 2003 and native plants that were still present in 2015 within each plant association at each trend transect location. Species composition has changed somewhat since 2003 on most if not all transects to include nonnative annual grasses (*Venenata dubia* and *Taeniatherum caput-medusae*). Exposed bare soil has decreased on all sites which would result in less potential soil movement or potential movement from erosion factors. As a result, it was determined that the current trend at these sites is stable or static. A review of these condition and trend plots indicates that open grasslands in satisfactory condition and moving towards objectives in the Umatilla National Forest Land and Resource Management Plan (4-63). See Appendix D for condition and trend monitoring results.





*Table 11. Condition and Trend Photo Point in Stalling Butte Pasture, 2003*



*Table 12. Condition and Trend Photo Point in Stalling Butte Pasture in 2015*





*Table 13. Condition and Trend Photo Point in Stalling Butte Pasture, 2003*



*Table 14. Condition and Trend Monitoring Photo Point in Stalling Butte Pasture, 2015*

## Condition and Tend 2003 (Little Tamarack Pasture)





*Table 15. Condition and Trend Monitoring Photo Point in Little Tamarack Pasture, 2003*

### **Condition and Trend 2015**



*Table 16. Condition and Trend Monitoring Photo Point in Little Tamarack Pasture, 2015*

### **Condition and Trend 2003 (Wildhorse Pasture)**





*Table 17. Condition and Trend Monitoring Photo Point in Wildhorse Pasture, 2003*



*Table 18. Condition and Trend Monitoring Photo Point in Wildhorse Pasture, 2015*

## **7 Appendix A: Best Management Practices for the Tamarack Allotment**

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### **7.1 BEST MANAGEMENT PRACTICES**

Best Management Practices (Ref: November 1988 PNW publication titled General Water Quality Best Management Practices) and corresponding mitigation measures include:

*RM-2:* Soil and water resources will be protected through management of livestock numbers and season of use.

- Permission to turn out must be obtained from the Forest Officer at least five (5) days in advance of livestock being turned out on designated forest allotments. Livestock entry onto the allotment or into a specific pasture will not be permitted until:
  - Soils are dry enough to prevent damage
  - Key plant species are ready to withstand grazing.
- The off-date for a pasture is when stock are to be fully out of the pasture, or in the case of the last pasture in the rotation, fully off the Forest. It may be necessary to begin gathering early or hire additional riders to achieve this.
- If implementation standards are reached on key areas prior to the scheduled move/turn off date, livestock will be required to move to the next pasture or off the Forest earlier than scheduled.
- Livestock numbers, season of use, and movement may be adjusted each year through the Annual Operating Instructions to allow for resource management needs.
- Adjustments to livestock numbers, season of use, and movement may also be made during implementation to respond to resource conditions that develop as the season progresses. These conditions may include: drought, wildfire, achievement of key plant species utilization levels, stubble height, etc. The type of mitigation used will be determined by the Forest Officer in charge, based on the degree of the problem and its cause. If mitigation activities do not achieve desired results, additional action will be taken (for example, reductions in stocking or season of use in subsequent years).

*RM-3:* Preclude concentration of stock in areas that are sensitive to concentrated use and/or preclude prolonged use of an area which will result in loss of vegetative cover and soil compaction.



- In no case will salt be placed closer than ¼-mile to streams or other wetlands without prior approval. Salting and bedding areas will not be located within 300 feet of any known heritage resource site.
- Project maps in Annual Operating Instructions will show current, inventoried, high priority, noxious weed infestations to be avoided and/or monitored.
- Noxious weed prevention measures (as listed in the Noxious Weed Report located in the analysis file) will be incorporated in management plans where ground disturbance is likely. Information on noxious weed identification, methods of spread and prevention measures will be provided to permittees in Annual Operating Instructions.

*RM-4:* Safeguard water quality under sustained forage production and manage forage harvest by livestock and wildlife.

- Forage resources will be allocated on a pasture-specific basis to meet basic plant and soil needs as a first priority. Forage production above basic resource needs will be available to wildlife and permitted livestock.
- Management activities will be designed and implemented to retain sufficient ground vegetation and organic matter to maintain long-term soil and site productivity.

## **7.2 PACFISH STANDARDS**

The following Forest Plan standards (PacFish) associated with livestock grazing apply to all Riparian Habitat Conservation Areas and activities outside of Riparian Habitat Conservation Areas that will degrade them

GM-1: Modify grazing practices (e.g. accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives, or are likely to adversely affect listed anadromous fish. Suspend grazing if adjusted practices are not effective in meeting Riparian Management Objectives and avoiding adverse effects on listed anadromous fish.

GM-2: Locate new livestock handling and/or management facilities outside of Riparian Habitat Conservation Areas. For existing livestock handling facilities inside Riparian Habitat Conservation Areas, assure that facilities do not prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish. Relocate or close facilities where these objectives cannot be achieved.

GM-3: Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish.

## 8 Appendix B

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Forest Plan Monitoring (Allowable Use Standards Including End of Season Monitoring for Uplands Grasses, Riparian Grasses and Sedges and Browse Use on Shrubs) on the Tamarack Allotment.

### 8.1 HABITAT TYPES

The following explains what use would look like for each habitat type listed in Table 11:

#### 8.1.1 Upland

- **Slight (6%-20%)**-The rangeland has the appearance of very light grazing. The key herbaceous forage plants may be topped or slightly used. Current seed stalks and young plants of key herbaceous species are little disturbed.
- **Light (21%-40%)**-The rangeland may be topped, skimmed, or grazed in patches. The low value herbaceous plants are ungrazed and 60-80% of the number of current seed stalks of key herbaceous plants remain intact. Most young plants are undamaged.
- **Moderate (41%-60%)**-Rangeland appears entirely covered as uniformly as natural features and facilities allow. Fifteen to 25% of the number of current seed stalks of key herbaceous species remain intact. No more than 10% of the number of low value herbaceous forage plants are utilized.

#### 8.1.2 Riparian

- **No Use (0%-5%)**
- **Slight Use (6%-20%)** – Herbaceous cover shows some cropping, beginning to look ragged. Seed heads and blossoms of plants liked best are selectively taken. Surface objects are masked. Separate plants are not easily recognized. Soil surface, when viewed from above is usually hidden by foliage. Palatable shrubs show no or slight use. A grazing line is not evident on shrubs or it is only observable because of past use. Sod mounds are difficult to see.
- **Light Use (21%-40%)** – Herbaceous cover is cropped lightly, having a patchy ragged look. Small surface objects, such as a tennis ball or dung heap, are masked. Soil surface, when viewed from above is starting to show. The stems as well as seed heads and blossoms of the best plants are being taken. Low value plants remain untouched. Separate plants are not easily distinguished. Palatable shrubs, particularly new growth, may show light use. No grazing line is evident from this year's grazing. Sod mounds are difficult to see.

### 8.1.3 Browse

Classes show relative degrees of use of available current year's growth (leaders) of key browse plants (willow, trees, shrubs, etc.)

- **No Use (0%-5%)**
- **Slight (6%-20%)**-Browse plants have the appearance of very light use. The available leaders of key browse plants have the appearance of very light use. The available leaders of key browse plants are little disturbed.
- **Light (21%-40%)**-Obvious evidence of leader use. The available leaders appear cropped or browsed in patches and 60% to 80% of the available leader growth of the key browse plants remain intact.

*Table 19. Forest Plan Monitoring (Allowable Use Standards Including End of Season Monitoring for Uplands Grasses, Riparian Grasses and Sedges and Browse Use on Shrubs) on the Tamarack Allotment.*

<b>Pasture</b>	<b>Location</b>	<b>Habitat Type</b>	<b>8.1.4 Year</b>	<b>Forest Plan Standard</b>	<b>End Of Season Use</b>
Little Tamarack	WF Bologna	Riparian Shrub	2015	30%	<b>8%</b>
Little Tamarack	2408 Rd	Uplands	2015	45%	<b>12%</b>
Wildhorse	SF Wall Creek	Riparian	2015	45%	<b>5%</b>
Stalling Butte	Rocky Flats	Uplands	2015	45%	<b>20%</b>
Stalling Butte	Tamarack Creek	Riparian Shrub	2015	30%	<b>20%</b>
Stalling Butte	Tamarack Creek	Riparian	2015	45%	<b>5%</b>
Tamarack	2408 Rd	Upland	2014	45%	<b>10.4%</b>
Wildhorse	SF Wall Creek	Riparian	2013	45%	<b>5%</b>

<b><i>Pasture</i></b>	<b><i>Location</i></b>	<b>Habitat Type</b>	<b>8.1.4 Year</b>	<b>Forest Plan Standard</b>	<b>End Of Season Use</b>
Stalling	Tamarack Creek	Riparian	2012	45%	<b>12.6%</b>
Stalling	2400 Rd.	Upland	2011	45%	<b>12.5%</b>
Little Tamarack	West Fork Bologna	Riparian Shrub	2011	30%	<b>11.2%</b>
Little Tamarack	2408 Rd.	Uplands	2011	45%	<b>13.6%</b>
Wildhorse		Upland	2011	45%	<b>23.3%</b>
Stalling	Burnt Cabin Creek	Riparian shrub	2011	30%	<b>16.2%</b>
Tamarack		Upland	2011	45%	<b>16%</b>
Stalling	Tamarack Creek	Riparian Shrub	2011	30%	<b>20.9%</b>
Stalling	Tamarack Creek	Riparian	2011	45%	<b>11.8%</b>
Stalling	Tamarack Creek	Riparian	2011	4 inch	<b>8.5</b>
Stalling	Burnt Cabin Creek	Riparian	2011	45%	<b>12.9%</b>
Stalling	Burnt Cabin Creek	Riparian	2011	4 inch	<b>7.5</b>
Wildhorse	S.F. Wall Creek	Riparian	2011	4 inch	<b>9.5</b>
Stalling Butte	Tamarack Cr.	Riparian/ Bank Alteration	2010	NS	<b>4%</b>
Stalling Butte	Tamarack Cr.	Riparian Shrub	2010	45%	<b>0-5%</b>

## Appendix C

Table 12 shows the results of stubble height utilization monitoring. Only the post-grazing (when cattle are out of the unit) measurements are recorded. The table illustrates current Designated Monitoring Areas (DMAs) by habitat type, and key species. Key Areas can be added or moved within a pasture to address on the ground resource conditions.

*Table 20. Stubble Height Utilization (IIT)*

<i>8.1.4.1.1 Unit</i> <b>(Pasture)</b>	<b><i>8.1.4.2 Key Area</i></b>	<b>Habitat Type</b>	<b>8.1.5</b>	<b>Residual Stubble Height Standard</b>	<b>End Of Season Residual Height</b>
Stalling Pasture	Tamarack Creek	Greenline	2015	4	8.0
Stalling Pasture	Tamarack Creek	Greenline	2012	4	8.0
Stalling Pasture	Burnt Cabin Creek	Greenline	2011	4	7.5
Stalling Butte	Tamarack Creek	Greenline	2011	4	8.5
Wildhorse	SF Wall	Greenline	2011	4	9.5

## 10 Appendix D Condition and Trend Monitoring Data

*Table 21. Tamarack Allotment Condition and Trend Analysis using the Parker 3-step Method: E = Excellent; G = Good; F = Fair; P = Poor; VP = Very Poor*

Allotment	Unit	Year	Condition Rating for Vegetation	Condition Rating for Soils	Trend
T-M #06	Little Tamarack	1966	F	F	
		1975	F	G	
		1984	P	G	
		1991	F	E	
		2002	F	E	
		2015	F	E	Static
T-M # 5	Little Tamarack	1966	F	G	
		1985	F	G	
		1991	F	G	
		2003	F	G	
		2015	F	G	Static
T-M #4	Stalling Butte	1966	E	G	
		1975	E	G	
		1984	E	G	
		1991	E	E	
		2002	G	E	
		2015	G	E	Static
T-M #10	Stalling Butte	1966	F	G	
		1977	F	F	
		1984	F	G	

<b>Allotment</b>	<b>Unit</b>	<b>Year</b>	<b>Condition Rating for Vegetation</b>	<b>Condition Rating for Soils</b>	<b>Trend</b>
		1991	G	G	
		2004	E	E	
		2015	G	E	Static
T-M #7	Wildhorse	1966	P	G	
		1975	F	G	
		1984	F	G	
		1991	G	G	
		2004	E	E	
		2015	E	E	Static



## 12 Appendix E Riparian Photos

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### 12.1 TAMARACK CREEK PHOTOS 1 AND 2



*Table 22. Tamarack Creek, Photo 1*



*Table 23. Tamarack Creek, Photo 2*



## 12.2 SOUTH FORK OF WALL CREEK PHOTOS 1 AND 2



*Table 24. South Fork of Wall Creek, Photo 1*



*Table 25. South Fork of Wall Creek, Photo 2*

## Dark Canyon Creek Photos 1 and 2





*Table 26. Dark Canyon Creek, Photo 1*



*Table 27. Dark Canyon Creek, Photo 2*



### 12.3 LOST CANYON CREEK PHOTOS 1 AND 2



*Table 28. Lost Canyon Creek, Photo 1*



*Table 29. Lost Canyon Creek, Photo 2*

#### **12.4 RIPARIAN PHOTO POINT SUMMARY**

Photo points were established on riparian areas within the Tamarack Allotment. Management of livestock and riparian conditions has been high priority for the Umatilla National Forest for many years. Many of the streams on the Tamarack Allotment have been fenced to; reduce grazing effects to sensitive riparian vegetation, stream bank, and improve water quality. Streams that have not been fenced are managed using reduced livestock numbers and season of use to meet resource conditions. Monitoring occurs on streams within the allotment when cattle are on the allotment and after cattle leave a pasture or allotment. Upland water sources have been developed since the 1960's and these developments play a major role in the management of riparian areas. There is a need to maintain existing upland water developments and improve additional upland water where it makes sense. Many of the streams that are within the Tamarack Allotment are ephemeral and are for the most part dry during the mid to late part of the year when cattle are still on the allotment. Continued maintenance and the development of new upland water developments is important to help maintain proper livestock distribution on pastures within the allotment. Appendix E Results from Interpreting Indicators of Rangeland Health

#### **12.5 RESULTS**

GIS data shows that approximately 52% of the Tamarack allotment is dominated by grassland plant communities. This figure is most likely low due to mapping capabilities. Grassland vegetation is primarily found on south facing slopes in the large drainages as well as along some ridge tops in the allotment. Sites have been identified to determine the existing plant communities and to determine locations for the application of IIRH. During this assessment, it was confirmed that these plant communities are primarily dominated by variations of Idaho fescue, Bluebunch wheatgrass, Onespoke oatgrass, June grass and Sandberg's bluegrass. During the field season of 2015, data was collected using the IIRH method.

Since the grassland communities were primarily Idaho fescue and Bluebunch wheatgrass communities, three IIRH sites were assessed within the each pasture within the allotment. Results represent the current resource conditions at the time of the assessment. This allows for an interpretation of how past and current management are affecting the ecology of the area evaluation. Table 3 represents a summary of the IIRH site ratings.

Pasture	Soil & Site Stability	Hydrologic Function	Biotic Integrity
Tamarack	None to Slight	Slight To Moderate	None to Slight
Stalling Pasture	Slight To Moderate	Slight To Moderate	Slight To Moderate
Wildhorse	None to Slight	None to Slight	Slight To Moderate

*Table 30. Results of the Interpreting Indicators of Rangeland Health Assessment for the Tamarack Rangeland Analysis*

## 12.6 CONCLUSIONS

The assessment looked at the 17 indicators of soil, hydrologic function, and biotic integrity on upland areas within the three pastures with upland vegetation. All upland pastures ranked as none to slight and slight to moderate departure from reference conditions. This assessment indicates that the conditions classes of grassland communities on pastures within the Tamarack Allotment are similar to desired conditions. Idaho fescue and Bluebunch wheatgrass communities of the two pastures are in a mid to late seral condition. Idaho fescue and Bluebunch wheatgrass dominates the plant communities and desired plants are still connected with limited occurrences of annual in the interspaces of the native bunchgrass communities. These results represent those bunchgrass plant communities located away from roads, dispersed camp sites, and where off road travel has not influenced the type of plant associated in these remote plant communities. This was intended to isolate grazing from other impacts to help assess livestock management in relation to vegetation conditions. Lower seral plant communities likely exist where other disturbances occur (i.e. dispersed camp sites, off road vehicle sites, campgrounds, trails, landings, roads, skid trails, corrals, and ponds). Areas of past disturbances, such as landings and clearcuts, have often been seeded with nonnative species. Though these conditions occur, they represent a small portion of the allotment and landscape. These localized areas may need active restoration efforts to improve vegetative conditions.

The monitoring conducted using the Interpreting Indicators of Rangeland Health (Pellant et. al. 2005) indicates that bunchgrass vegetation closely resembles reference conditions. Reference conditions would meet the vegetation objective in Umatilla National Forest Land and Resource Management Plan (4-63).



## 12.7 PICTURES OF THE IIRH SITES

### 12.7.1 Stalling Butte Pasture



Little Tamarack Pasture



*Table 31. Little Tamarack Pasture*

## **12.8 WILDHORSE PASTURE**



*Table 32. Wildhorse Pasture*

## **12.9 MONITORING SUMMARY**

Best Management Practices, Forest Plan Utilization Monitoring, Stubble Height Utilization Monitoring, Condition and Trend Monitoring Riparian Photos, and Interpreting Indicators of Rangeland Health Assessment has provided background information to determine that resource conditions on the Tamarack Allotment are in satisfactory condition and are moving towards desired conditions. Administration of the Tamarack Allotment by agency resource specialists working closely with the permittees is effective in managing rangeland resources.



## **APPENDIX F- The Effects of Livestock Grazing and Stand Dynamics and Soils in Upland Forests of the Interior West.**

The Umatilla Land and Resource Management Plan requires managing each Management Area for a maximum amount of tons/acre of fuel as related to wildfire. Livestock grazing will not cause a short-term increase in fuel, but will decrease fuel through utilization of forage. Belsky and Blumenthal (1997) stated that overgrazing has had “profound effects” on a wide range of conditions in the Interior West including contributing to a change in tree species composition. A Review of Belsky and Blumenthal (1997) by Michael M. Borman emphasized the historical context of overgrazing by livestock (Borman 2003). Livestock grazing on the Swale Creek Allotment results in utilization consistent with the Forest Plan (light to moderate use), which is unlike the amount of use that Belsky and Blumenthal (1997) discussed in their case studies. As a result, livestock grazing under the current management on the Tamarack Allotment is not likely to cause a long-term change in tree species composition or contribute to an increase in fuels above the Forest Plan standard. Fuels projects outside the scope of this project are currently and will continue to address fuel treatment projects in this area. As a result, livestock grazing on the Tamarack Allotment is consistent with the Forest Plan.

## **13 Appendix G: Project Design Criteria (PDCs) and Best Management Practices (BMPs)**

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### **13.1 PROJECT DESIGN CRITERIA AND BEST MANAGEMENT PRACTICES**

Project design criteria (PDCs) serve to mitigate impacts to critical resources. Best Management Practices are design criteria that assure FS compliance with CWA including state water quality standards. The purpose of the rangeland National Core BMPs is to avoid, minimize, or mitigate adverse effects to soil, water quality and riparian resources that may result from rangeland management activities (USDA, 2012).

The range core BMPs are based on administrative directives that guide and direct the FS planning and permitting of livestock activities on FS lands. The range core BMPs can be found online at the National Best Management Practices for Water Quality Management website<sup>10</sup>.

#### **13.1.1 BMP Range-1 (Rangeland Management Planning)**

BMP Range-1 (*Rangeland Management Planning*) covers planning for grazing allotments. The planning process which includes the 2017 Tamarack Allotment EA is consistent with the guidance. The planning process identified measures to include in the Allotment Management Plan (AMP) to avoid, minimize, or mitigate adverse impacts to soil, water quality, and riparian resources from rangeland management activities.

#### **13.1.2 BMP Range -2 (Rangeland Permit Administration)**

BMP Range -2 (*Rangeland Permit Administration*) provides practices to be used when administering rangeland permits, including controlling overall livestock numbers, distribution and season of use. The Tamarack permit, AMP, AOI and monitoring requirements are consistent with this direction addressing all the recommended practices.

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<sup>10</sup> The web address as of August, 2017 is:

[http://fs.fed.us/biology/resources/pubs/watershed/FS\\_National\\_Core\\_BMPs\\_April2012.pdf](http://fs.fed.us/biology/resources/pubs/watershed/FS_National_Core_BMPs_April2012.pdf)

PDC#	Project Design Criteria:	Objective
RPA 1	<p>Permission to turn out must be obtained from the Forest Officer at least five (5) days in advance of livestock being turned out on designated forest allotments.</p> <p>Livestock entry onto the allotment or into a specific pasture will not be permitted until:</p> <p style="padding-left: 40px;">Soils are dry enough to prevent damage</p> <p>Key plant species are ready to withstand grazing.</p>	<p><i>Protecting soil and water resources through management of livestock numbers and season of use.</i></p>
RPA 2	<p>The off-date for a pasture is when stock are to be fully out of the pasture, or in the case of the last pasture in the rotation, fully off the Forest. It may be necessary to begin gathering early or hire additional riders to achieve this.</p>	<p><i>Protecting soil and water resources through management of livestock numbers and season of use.</i></p>

<b>PDC#</b>	<b>Project Design Criteria:</b>	<b>Objective</b>
RPA 3	If implementation standards are reached on key areas prior to the scheduled move/turn off date, livestock will be required to move to the next pasture or off the Forest earlier than scheduled.	<i>Protecting soil and water resources through management of livestock numbers and season of use.</i>
RPA 4	Livestock numbers, season of use, and movement may be adjusted each year through the Annual Operating Instructions to allow for resource management needs.	<i>Protecting soil and water resources through management of livestock numbers and season of use.</i>

PDC#	Project Design Criteria:	Objective
RPA 5	<p>Adjustments to livestock numbers, season of use, and movement may also be made during implementation to respond to resource conditions that develop as the season progresses. These conditions may include: drought, wildfire, achievement of key plant species utilization levels, stubble height, etc. The type of mitigation used will be determined by the Forest Officer in charge, based on the degree of the problem and its cause. If mitigation activities do not achieve desired results, additional action will be taken (for example, reductions in stocking or season of use in subsequent years).</p>	<p><i>Protecting soil and water resources through management of livestock numbers and season of use.</i></p>

PDC#	Project Design Criteria:	Objective
RPA 6	In no case will salt be placed closer than ¼-mile to streams or other wetlands without prior approval. Salting and bedding areas will not be located within 300 feet of any known heritage resource site.	<i>Preclude concentration of stock in areas that are sensitive to concentrated use and/or preclude prolonged use of an area which will result in loss of vegetative cover and soil compaction.</i>
RPA 7	Project maps in Annual Operating Instructions will show current, inventoried, high priority, noxious weed infestations to be avoided and/or monitored.	<i>Preclude concentration of stock in areas that are sensitive to concentrated use and/or preclude prolonged use of an area which will result in loss of vegetative cover and soil compaction.</i>

PDC#	Project Design Criteria:	Objective
RPA 8	Noxious weed prevention measures (as listed in the Noxious Weed Report located in the analysis file) will be incorporated in management plans where ground disturbance is likely. Information on noxious weed identification, methods of spread and prevention measures will be provided to permittees in Annual Operating Instructions.	<i>Preclude concentration of stock in areas that are sensitive to concentrated use and/or preclude prolonged use of an area which will result in loss of vegetative cover and soil compaction.</i>
RPA 9	Forage resources will be allocated on a pasture-specific basis to meet basic plant and soil needs as a first priority. Forage production above basic resource needs will be available to wildlife and permitted livestock.	Objective: Safeguard water quality under sustained forage production and manage forage harvest by livestock and wildlife.



PDC#	Project Design Criteria:	Objective
RPA 10	Management activities will be designed and implemented to retain sufficient ground vegetation and organic matter to maintain long-term soil and site productivity.	Objective: Safeguard water quality under sustained forage production and manage forage harvest by livestock and wildlife.

*Table 33. Range 2 -Rangeland Permit Administration (RPA): Practices to be used when administering rangeland permits, including controlling overall livestock numbers, distribution and season of use.*

### **13.1.3 BMP RANGE-3 (RANGELAND IMPROVEMENTS)**

BMP Range-3 (Rangeland Improvements) provides guidance for construction and maintenance of structural and nonstructural range improvements such as water sources. Additionally AquEco-3- (Ponds and Wetlands) and WatUses-3 (Administrative Water Developments) practices would also apply to this project.

*Table 34. Range 3 -Rangeland Improvements (RI): Practices to be used for the construction and maintenance of structural and nonstructural range improvements such as water sources.*

PDC#	Project Design Criteria	Objective
RI 1	Include and schedule improvement actions and maintenance in the AMP and grazing permit.	<i>Protecting soil and water resources during the construction and maintenance of range improvement.</i>

PDC#	Project Design Criteria	Objective
RI 2	Range specialists will consult with a hydrologist and/or fish biologist prior to pond maintenance and the development of the new water sources. The specialists will review the BMP guidance in Range-3 (Range Improvements), AquEco-3- (Ponds and Wetlands), AquEco-4 (Stream Channels and Shorelines) and WatUses-3 (Administrative Water Developments); and identify site-specific BMPs.	<i>Protecting soil and water resources during the construction and maintenance of range improvement.</i>
AQ <sup>11</sup> 1	Use appropriate measures to protect the waterbody when preparing for construction or maintenance activities.	<i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i>
AQ 2	Conduct operations during dry conditions.	<i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i>
AQ 3	Identify suitable areas away from waterbodies for disposal sites before beginning operation.	<i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i>
AQ 4	Avoid heavy equipment in wet meadows and riparian areas. Operations will only occur in dry conditions.	<i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i>

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<sup>11</sup> AquEco-3- Ponds and Wetlands, AquEco-4 Stream Channels and Shorelines (AQ) and WatUses-3 Administrative Water Developments (WU): Practices to be used when designing and implementing pond and wetland projects to avoid, minimize or mitigate adverse effects to soil, water quality and riparian resources.

PDC#	Project Design Criteria	Objective
AQ 5	<p>Promptly rehabilitate or stabilize disturbed areas as needed following construction or maintenance activities.</p> <p>Promptly compact fills to avoid or minimize erosion.</p> <p>Contour sit to disperse runoff, minimize erosion, stabilize slopes and provide a favorable environment for plant growth.</p>	<p><i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i></p>
AQ 6	<p>Use suitable measures to protect the spring when preparing the site for construction or maintenance activities.</p> <p>Locate access and staging areas near the project site but outside of work area boundaries, streamside management zones, wetlands and sensitive soil areas.</p> <p>Refuel and service equipment only in designated staging areas.</p> <p>Consider using small, low ground-pressure equipment and/or hand labor where practicable.</p>	<p><i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i></p>
AQ 7	<p>Ensure all equipment operated in or adjacent to the waterbody is clean of aquatic invasive species as well as oil and grease.</p>	<p><i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i></p>
AQ 8	<p>Erosion control will be utilized in areas of soil disturbance by heavy equipment or other ground disturbing activities.</p>	<p><i>Protecting soil and water resources when designing and implementing pond and wetland projects.</i></p>

PDC#	Project Design Criteria	Objective
WU 1 <sup>12</sup>	Locate the water trough, tank or pond at a suitable distance from the spring or channel to avoid or minimize adverse effects to the spring, channel as well as wetland/riparian vegetation.	<i>Protecting soil and water resources when developing and operating water sources.</i>
WU 2	Design the collection system to avoid, minimize or mitigate adverse effects to the spring development and downstream waters from excessive water withdrawal, flooding, sedimentation, contamination, vehicular traffic and livestock as needed.	<i>Protecting soil and water resources when developing and operating water sources.</i>
WU 3	Use suitable measures to avoid and minimize erosion at the overflow of water trough, tank or pond.	<i>Protecting soil and water resources when developing and operating water sources.</i>
WU 4	Periodically monitor the spring development and promptly take corrective action for sediment buildup in the spring box, clogging of outlet and overflow pipes, diversion of surface water for the collection area and spring box, erosion from overflow pipes, and damage from animals.	<i>Protecting soil and water resources when developing and operating water sources.</i>
WU 5	Water source should be fenced if boggy.	<i>Protecting soil and water resources when developing and operating water sources.</i>

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<sup>12</sup> **WatUses-3 Administrative Water Developments (WU):** Practices to be used when developing and operating water sources to avoid, minimize or mitigate adverse effects to soil, water quality and riparian resources.

### 13.1.4 Sensitive Plants Design Criteria

Table 35. Sensitive Plants Design Criteria

PDC#	Project Design Criteria	Objective
SP <sup>13</sup> 1	Salting should not be authorized or allowed within one-quarter mile of occupied habitat of threatened, endangered, or sensitive plant species, except when protected by fencing.	<i>To protect known sensitive plant populations and their current habitats by preventing disturbance to the individual plants and the immediate area.</i>
SP 2	Prior to construction of fences or placement of jackstraw, a botanist should clearly mark sensitive botanical sites to minimize ground disturbance.	<i>To protect known sensitive plant populations and their current habitats by preventing disturbance to the individual plants and the immediate area.</i>
SP 3	If any new sensitive plant populations are located, a Forest Service botanist will be notified. The population will be evaluated, and a mitigation plan shall be developed in consultation with the botanist.	<i>To protect known sensitive plant populations and their current habitats by preventing disturbance to the individual plants and the immediate area.</i>
SP 4	Fence construction and other operational activities shall not be allowed in any documented sensitive plant sites unless it is for the demonstrated benefit or protection site.	<i>To protect known sensitive plant populations and their current habitats by preventing disturbance to the individual plants and the immediate area.</i>

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<sup>13</sup> Sensitive Plants (SP) and Habitats

PDC#	Project Design Criteria	Objective
UNQH <sup>14</sup> 1	The integrity of unique habitats shall be maintained. Unique habitats [may] include meadows, rimrock, talus slopes, cliffs, animal dens, wallows, bogs [fens], seeps and springs. This shall be accomplished by incorporating cover buffers approximately 100 feet in width during fence-building projects.	<i>To protect from direct disturbance the unique habitats that harbor, or potentially harbor, a number of sensitive plant species. These habitats represent the majority of locations where sensitive species occur on the Umatilla National Forest.</i>
UNQH 2	To the extent possible, constructed fences will be placed outside the channel migration zone (floodplain).	<i>To protect from direct disturbance the unique habitats that harbor, or potentially harbor, a number of sensitive plant species. These habitats represent the majority of locations where sensitive species occur on the Umatilla National Forest.</i>
GDE <sup>15</sup> 1	The integrity of groundwater-dependent ecosystems (GDE) shall be maintained. Spring developments shall not dewater GDEs. Spring developments shall not be allowed if the spring is occupied by rare or sensitive plant species, or in peatlands, fens, or where histic soils are present.	<i>To protect the types of habitat where the largest number of sensitive plants in the forest are found. These criteria will prevent soil and hydrological disturbance during project implementation, specifically relating to spring developments, this will help to maintain the habitat characteristics necessary for sensitive plant populations.</i>

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<sup>14</sup> Sensitive and Unique Habitats (UNQH)

<sup>15</sup> Groundwater-Dependent Ecosystems (GDE)

PDC#	Project Design Criteria	Objective
GDE 2	Fence construction shall not be allowed in springs, seeps, or any other GDE, unless it is for the benefit or protection of the GDE or development of the spring.	<i>To protect the types of habitat where the largest number of sensitive plants in the forest are found. These criteria will prevent soil and hydrological disturbance during project implementation, specifically relating to spring developments, this will help to maintain the habitat characteristics necessary for sensitive plant populations.</i>
GDE 3	Spring developments should not disturb the spring orifice (point where water emerges). Spring head boxes should be placed in a location that will cause the least amount of disturbance to the soils and vegetation of the GDE. Preferable locations for spring head boxes should be in an established channel downstream from the orifice or a location where flowing water becomes subsurface.	<i>To protect the types of habitat where the largest number of sensitive plants in the forest are found. These criteria will prevent soil and hydrological disturbance during project implementation, specifically relating to spring developments, this will help to maintain the habitat characteristics necessary for sensitive plant populations.</i>
GDE 4	Spring developments shall have a return flow system to minimize the diversion of surface and subsurface water from the catchment area. Consider using a float valve or similar device to reduce the amount of water withdrawn from the GDE.	<i>To protect the types of habitat where the largest number of sensitive plants in the forest are found. These criteria will prevent soil and hydrological disturbance during project implementation, specifically relating to spring developments, this will help to maintain the habitat characteristics necessary for sensitive plant populations.</i>

PDC#	Project Design Criteria	Objective
GDE 5	When developing springs, place troughs far enough away from GDEs, wetlands, and other sensitive or unique habitats to prevent erosion, compaction, or degradation to sensitive soils and vegetation due to livestock congregation.	<i>To protect the types of habitat where the largest number of sensitive plants in the forest are found. These criteria will prevent soil and hydrological disturbance during project implementation, specifically relating to spring developments, this will help to maintain the habitat characteristics necessary for sensitive plant populations.</i>

### 13.2 PacFish STANDARDS

The following Forest Plan standards (PacFish) associated with livestock grazing apply to all Riparian Habitat Conservation Areas and activities outside of Riparian Habitat Conservation Areas that will degrade them

- GM-1: Modify grazing practices (e.g. accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives, or are likely to adversely affect listed anadromous fish. Suspend grazing if adjusted practices are not effective in meeting Riparian Management Objectives and avoiding adverse effects on listed anadromous fish.
- GM-2: Locate new livestock handling and/or management facilities outside of Riparian Habitat Conservation Areas. For existing livestock handling facilities inside Riparian Habitat Conservation Areas, assure that facilities do not prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish. Relocate or close facilities where these objectives cannot be achieved.
- GM-3: Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of Riparian Management Objectives or adversely affect listed anadromous fish.



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